Embracing the serpent

Chapter 3.11

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EMBRACING THE SERPENT: EDUCATION FOR ECOSOPHY AND AESTHETIC APPRECIATION

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ABSTRACT

This chapter draws upon Arne Naess and Ronald Hepburn to think through some limitations of approaching environment and sustainability education via knowledge from science and technology alone. Naess thought that ecologists instinctively understood what many others struggle to – that the equal right to live and blossom is a normative value that should be granted to all living things and not just humans. Nonetheless, Naess held that ecology is a limited science. It is limited because scientific methods can generate descriptive facts about the world but not values to guide action in the world. For the formation of personal ecological values that guide action, or what Naess calls an "ecosophy", systematic philosophical thinking about self-realisation and nature is needed. Those who develop their own "ecosophies" recognise that human and non-human life are intrinsically interconnected and that, as such, all of life suffers when humans think and act as if they are not interconnected. Hepburn also saw serious limits to scientific knowledge. For Hepburn, scientific method requires the stripping away of all the embodied experiences that make people human. This chapter argues that from Hepburn and Naess we can learn that a balanced education is not confined to inculcating scientific knowledge or skills. Instead it also involves the exploration of ecological values as well as serious aesthetic appreciation. The chapter concludes by discussing how Ciro Guerra's film *Embrace of the serpent* might be educational. It is claimed that the film offers viewers an opportunity to think about human–environment relations in alternative and more ecophilosophically fruitful and aesthetically serious ways. *Embrace of the serpent* illustrates how and why arts and especially film-based educational interventions can come to matter.

Keywords: aesthetic appreciation, art, ecosophy, *Embrace of the serpent*, film education, Hepburn, Naess, nature

THE ENVIRONMENTAL CRISIS AND DEEP ECOLOGY

There was recently a piece on the BBC news website about a team of scientists who are setting up a research centre in Cambridge that will consider radical technological solutions to "fix" climate change on Earth (Ghosh, 2019). This initiative is being coordinated by Professor David King, former chief scientific advisor to the UK government. The "geo-engineering" solutions under consideration by staff in the new Centre for Climate Repair include "refreezing the poles" and "greening" the oceans. In the former proposal, seawater would be pumped high into the air above the polar regions via vast masts in remotely controlled boats. The idea here is that the greater quantity of salt particles in the air would make the clouds in the area more reflective and, in turn, cool the poles below them. In the latter proposal iron salts would be dropped in the oceans to fertilise them and stimulate the growth of masses of algae that would absorb carbon dioxide in the air and render it less harmful for the environment. Looking to science

now is understandable. However, the notion that science and technology can in themselves "fix" climate change is not without critics. Arne Naess (1990) for one argues that the belief that scientific and technical solutions can solve the environmental crisis is one of the pillars of the shallow ecological movement. Naess is deeply critical of this movement as it rests on shallow ideological assumptions about the nature of the good life. Shallow ecological thinking sustains the idea that the good life is one of high production and consumption and material affluence.

Naess argues that humans should not respond to the environmental crisis by focusing on developing technical solutions that allow high-consumption lifestyles in the West to be maintained. Instead the crisis can prompt reflection about alternative sources of meaning in life; it can help human beings "choose a new path, with new criteria for progress, efficiency and rational action" (Naess, 1990: 26). For Naess it is not primarily new technological solutions that are needed. Instead people in the developed world, who contribute most to climate change, need to fundamentally rethink what they value and how they live. In an influential paper Naess (1973) outlined his concerns about shallow ecological thinking and his preference for deep ecological thinking. According to Naess the shallow ecological movement does fight against pollution and resource depletion, but it has the central objective of ensuring the continued health and affluence of people in the developed world. The deep ecological movement in contrast is characterised by seven very different norms. It firstly rejects the shallow "man-in-environment" image in favour of the "relational, total-field image". Following Spinoza, Naess (1990) maintains that living things are intrinsically interconnected such that if living beings A and B are related the very nature of both is changed by being in that relation. Deep ecology secondly embraces "bio-spherical egalitarianism". Naess argues that the right to live and blossom should be expanded to all living things and not just humans. He says it is "intuitively clear" to the ecologist in the field that the restriction of the "equal right to live and blossom" to humans alone "is an anthropocentrism with detrimental effects" upon both human life and other life forms (Naess, 1973: 96). The idea that non-human life is intrinsically valuable is a key facet of the deep ecology movement, where "the value of non-human life forms is independent of the usefulness these may have for narrow human purposes" (Naess, 1990: 29).

The movement thirdly favours ecosystems and human lifestyles that are "diverse and symbiotic". Naess remarks that "ecologically inspired attitudes therefore favour diversity of human ways of life, of cultures, of occupations, of economies … and they are opposed to the annihilation of seals and whales as much as to that of human tribes or cultures" (1973: 96). Naess fourthly explains how an "anti-class posture" means that future plans are only worthy of endorsement from the deep ecology movement when they expand classless diversity of human ways of life. Naess fifthly acknowledges that deep ecology fights against "resource depletion and pollution". While this is the only or core objective of shallow ecology, for followers of deep ecology all seven principles need to be prioritised. The movement sixthly endorses "complexity not complication". This means not ignoring the need to develop new technologies and environmental policies but only doing so in responsible and sustainable ways and with due recognition of human ignorance of the complexity of ecosystems. The deep ecology movement lastly calls for "local autonomy and decentralization" so as to, amongst other things, reduce energy consumption. In summing up his argument Naess stresses that the seven norms of the deep ecology movement are not derived from the practice of ecology but from philosophy. Ecology he says is "a limited science which makes use of scientific method" (1973: 99) to generate descriptive hypotheses about the world. Philosophy on the other hand is prescriptive and descriptive, containing "*both* norms, … value priority announcements *and* hypotheses concerning the state of affairs in our universe" (1973: 99, emphasis in original).

Naess's concepts of shallow and deep ecology open up some vital questions for educators, perhaps especially those in the sciences, arts and humanities. How should educators

and education policy makers respond to the environmental crisis? Should the focus be placed on teaching the next generation specialised scientific and technological skills to help them "fix" climate change, or should students be encouraged to think about choosing a new path informed by the values and norms of deep ecology? In what follows I argue that environmental and sustainability education ought to involve much more than the teaching of climate-fixing skills. Environment and sustainability education can be enriched, I will claim, via student engagement with deep ecological values as well as serious aesthetic reflection upon art and nature. There are three main steps to my argument. I first outline Naess's concept of Self-realisation, in the process explaining why his deep ecology can survive Watson's objection of anti-anthropocentric biocentrism. I secondly draw upon both Naess and Hepburn to question the idea that scientific, objective knowledge is more valuable than knowledge from subjective human experience. I thirdly argue that from Hepburn and Naess it can be learned that a balanced education is not confined to inculcating scientific knowledge or skills. Instead it also involves the exploration of ecological values as well as serious aesthetic appreciation. I pull the chapter together by explaining why I think *Embrace of the serpent* is an ideal stimulus for reflection on the environment and sustainability. I argue the film has rich educational possibilities as it invites viewers to think about human–environment relations in ecophilosophically fruitful and aesthetically serious ways. I conclude that *Embrace of the serpent* illustrates how and why arts and especially film-based interventions can come to matter in education generally and STEAM programs specifically. Here I note that, though film can be manipulative, it can also be an educative art medium when it broadens the ethical horizons of spectators.

OVERCOMING ANTHROPOCENTRISM THROUGH SELF-REALISATION

Naess's deep ecology has proven controversial. Watson (1983) suggests Naess adopts a position of "anti-anthropocentric biocentrism" – a position that hinges on the idea that human desires, goals and interests should not be privileged over those of other species. Watson is not in favour of this position. He thinks it requires humans to unfairly curb their natural evolutionary instinct for flourishing and survival. Watson does agree with Naess that human action should promote ecological diversity. However, what justifies Watson's belief here is not the principle that all species have an equal right to live and blossom. Instead, Watson believes ecological diversity is desirable, as "human survival depends on it" (1983: 256). Watson maintains that Naess and other "ecosophers" do not approach the *egalitarian* aspect of bio-spherical egalitarianism as seriously as he does. He picks up on Naess's (1980) assertion that non-human animals should be cared for, for their own good, by humans. Watson thinks this indicates that "ecosophers" like Naess want to set humans apart from other species in ways that are not egalitarian. He argues it is not egalitarian to conclude that human behaviour is so destructive of the environment that humans, unlike other species, ought not be allowed to live out their evolutionary potential. Watson (1983) suggests that in any genuine bio-egalitarianism, human beings would be allowed to live out their evolutionary potential, like all other species, even if the results prove self-destructive. In the final sections of this chapter I will show how the arts, and specifically film, might encourage students to develop new and deep ecological sensitivities rather than the shallow human-in-the-environment values Watson seems to prefer. However, I will first consider whether Watson's depiction of Naess's work is fair.

It is true that Naess thinks human beings should care and accept responsibility for the flourishing of other living beings. Naess after all states that a "specific feature of human make-up is that human beings consciously perceive the urge that other living beings have for self-realisation and that we must therefore assume *a kind of responsibility for our conduct towards others*" (Naess, 1990: 170, emphasis in original). However, I do not think Watson's objection

that bio-egalitarianism is "anti-anthropocentric" is ultimately persuasive. Naess (1973, 1990) after all grants that some killing, suppression and exploitation of non-human life forms will be a necessary part of any human life lived in step with bio-egalitarianism. He says the principle "has sometimes been misunderstood as meaning that human needs should never have priority over non-human needs … this is never intended. In practice, we have … greater obligation to that which is nearer us" (Naess, 1990: 170). Naess (1984) responded to Watson, rejecting the idea that he or any other philosopher he knew had adopted an ecosophy of anti-anthropocentric biocentrism. Naess (1984) maintained that, while non-vital interests of humans should yield to the vital interests of non-humans, the vital interests of humans can take precedence over the interests of non-humans. The killing of a wolf is not always morally justified for the ecosopher but it would be to save a human life.

Naess (1990) actually insists that humans, like other animals and plants, have a right to self-realisation, to the unfolding of their potentialities to the fullest. Naess comments that his ecosophy "says yes to the fullest realisation of man" (1984: 270). However, for Naess the fullest Self-realisation (with a capital S) of humans involves not the narrow pursuit of egoistic goals but "deep identification … with all life forms" (1990: 85). For Naess, Self-realisation includes personal as well as community realisation. Importantly, Naess (1990) believes humans, other animals and plants all have a right to Self-realisation. Naess does not then, as Watson has it, deny that humans should be able to realise their evolutionary potential. He rather thinks they have evolved to the point that it is now part of their nature to be able to understand and care for other living things and have an *ecological consciousness*. Naess remarks that "the emergence of human ecological consciousness is a philosophically important idea: a life form has developed on Earth which is capable of understanding and appreciating its relations with all other life forms and to the Earth as a whole" (1990: 166). In sum, Naess's deep ecology can survive the objection of anti-anthropocentric biocentrism. This is important from an educational as well as philosophical perspective. In light of this, educators who want to explore the merits of sustainable living with students need not rely upon reasoning from human self-interest and the anthropocentric argument that ecological diversity is desirable because human survival depends upon it. Instead an ecologically richer account of human personhood and Self-realisation can be discussed as worth striving for.[1]

SCIENCE AND VALUES, ECOLOGY AND ECOSOPHY

> A detailed investigation of the evaluations in a given ecological or other scientific investigation will never uncover the values at the end of this process. At the end of the scientific process lie ultimate assumptions of a philosophical kind. (Naess, 1990: 40)

So far, we have seen that in his early defence of the deep ecology movement Naess (1973) suggested that ecologists instinctively understood what many others struggle to understand – that the equal right to live and blossom is a normative value that should be granted to all living things and not just humans. Nonetheless, Naess also held that ecology is still only a limited science – limited as scientific method can generate descriptive facts about the world but not values to guide action in the world. In later work he elaborates on this theme. In *Ecology, community and lifestyle* (1990) Naess says that when scientists make value judgements and develop prescriptions to guide action and policy they do not do so as scientists, but as

[1] While writing this paper I was interrupted by hundreds of joyous school children together marching past my office on the Royal Mile down to the Scottish Parliament. This recent climate change strike and the many others like it across the world inspired by Greta Thunberg (2019) are a reminder that students can teach "grown-ups" about how to collectively respond to the environmental crisis.

generalists and philosophers. He reasons that it is simply not logically possible to derive values from scientific hypotheses *alone*. Naess does acknowledge that norms about what ought to be done are often at least in part informed by hypotheses about how the world is structured. Nonetheless, Naess draws a rather Humean distinction between two types of statement, *norms* and *hypotheses*. Norms are "prescriptions or inducements to think or act in certain ways" (1990: 42) while hypotheses are revisable and are staples of scientific method. Naess indicates that normative statements ought to be revisable like hypothetical ones. However, at base a hypothetical statement aims to describe what the world is like. A normative statement, in contrast, prescribes general guidelines for thought and action. Naess remarks that while ecology "may comprise a great deal … it should never be considered a universal science" (1990: 39) as it cannot by itself generate norms to guide action. Nor can ecology by itself represent the sort of total philosophical world view that Naess thinks needs to underpin well-thought-through ecological values.

For the formation of a personal code of ecological values that guide action, or what Naess calls an ecosophy, systematic philosophical thinking about self-realisation and nature is needed, not scientific experiment alone. Naess maintains that philosophy can mean two things. It can be "1) a field of study, an approach to knowledge; 2) one's own personal code of values and a view of the world which guides one's own decisions" (1990: 36). Naess adds that "ecosophy" is the name for the second meaning of philosophy that asks questions about ourselves and nature. Naess explains that an ecosophy is a "philosophical worldview" borne out of "conditions of life in the ecosphere" (1990: 38). Naess stresses that having a world view about life on Earth is different from careful and systematic philosophical expression of that world view. A philosophical world view is not just an approach to knowledge formation as in the case of the scientific method. Instead it involves many components including but not limited to epistemology, ethics, ontology, philosophy of science and aesthetics (Naess, 1990). Naess wrote *Ecology, community and lifestyle* in the hope that it would encourage readers to try to give more systematic expression to their own ecosophies. In this respect Naess believed that individual supporters of the deep ecology movement should develop their own personal ecosophies. These do not need to be founded on any particular philosophy or religion but will nonetheless generally be consistent with all the principles of the deep ecology movement. Those who develop their own ecosophies would certainly recognise that human and non-human life are intrinsically interconnected and that, as such, all of life suffers when humans think and act as if they are not interconnected. Attending thoughtfully to the deliverances of subjective human experience is a vital part of this relational-field aspect of Naess's ecosophy.

OBJECTIVITY AND SUBJECTIVITY IN ECOSOPHY AND THE SCIENCES AND ARTS

Naess maintained that all attempts by scientists and philosophers to provide descriptions of things in themselves, independent of any sensory and subjective experience of them, had failed. Naess (1990) followed Whitehead in rejecting the idea that nature is a "dull affair" without sound, scent or colour. In particular Naess disputed the validity of the seventeenth-century distinction between primary and secondary qualities.[2] Primary qualities were said to be *objective* in the sense that they were *in the objects themselves*, independent of any human subject beholding the object. Primary qualities include geometric properties like shape, weight and size. Secondary qualities like colour or taste in contrast were said to be *subjective*. They

[2] Locke (1969) expounded this distinction. He thought secondary qualities are not in the objects themselves. They are only powers to produce sensations in persons. Primary qualities are in the objects themselves.

are not in the object itself but are rather projected into it by a human subject. Naess suggests that, from this perspective, human subjectivity is severed of value, with prestige belonging to the "core of reality, which is real, measurable and scientific" (1990: 53). Naess argues that ontologically this gets things the wrong way around. For Naess it is primary properties that lack real-world content. He remarks that "the geometry of the world is not *in* the world" (1990: 57, emphasis in original). Naess argues that in his ecosophy[3] secondary qualities are genuinely deemed to be real qualities in the natural world. However here the qualities are not to be found just in objects in themselves. Instead reality is relational.

To illustrate this point Naess asks his readers to imagine they have put one of their hands in their pocket and the other in the cold outside air. If they then put both hands in a bucket of water, he says one hand will experience the water as warm and the other as cold. For Naess these divergent experiences of the same phenomenon do not mean that human subjectivity is inherently unreliable or that sensory experiences of objects are mere projections. Naess believed it is possible to account for different perceptual experiences of the same thing, not by discounting the evidence from subjectivity but by developing an alternative "relational-field" (1990: 55) ontology. Such an ontology takes into account the totality of interrelated experiences that go into any sensory engagement with objects. Naess maintains there is no contradiction in saying something like water A is warm in relation to hand A, but cold in relation to hand B. He stresses that the content of reality here is not just the senses and consciousness of the subject but also the objects and properties in the world: the water, cold, hands and warmth. Naess suggests such relational statements are precise and true representations of reality and not mere subjective impressions of it. Naess was not the only twentieth-century philosopher interested in how human subjectivity could enrich understanding of the environment.

In a manner reminiscent of Naess, Ronald Hepburn (1990) argues that there are two different "thought models" for understanding reality. One model is the "objectifying way", the other, the "subjectivising way". Sciences provide the prime example of the objectifying way. This way involves the formation of hypotheses about the world that can be tested in controlled experiments. Inquiries informed by the subjectivising way are by contrast typically found in the humanities and arts. The subjectivising way requires sensitive attention to the particulars of lived human experience. The arts can enrich life but, from the perspective of the objectifying way, the focus the arts place on individual moods and emotions discredits them as reliable routes to truth about reality (Hepburn, 2001). The objectifying way thus seeks to strip away all traces of human subjectivity from the pursuit of knowledge, instead focusing on "the quantifiable objective qualities handled by the sciences" (2001: 26). Hepburn claims that scepticism about the truth-revealing capacities of art is founded in a general "disparagement of subjectivity as such" (1990: 191). Those inclined to disparage art are likely those who accept that the objectifying way is the only reliable way to reality. Hepburn (1990, 2001) questions these dualistic thought models and concludes that the arts and the sciences can both generate truthful understanding of reality. Hepburn believes that human subjectivity underpins all knowledge-seeking practices, concluding that "in art, as outside it, the subjectivising way can be a cognitive path" (1990: 196). Naess and Hepburn both then denounce the idea that *only* objective and scientific knowledge is valuable. As we shall now see, they both nonetheless also believe that, if subjective human experiences are to reliably help would-be knowers understand reality, they require thoughtful reflection and education.

EDUCATING FOR ECOSOPHY AND THE AESTHETIC APPRECIATION OF ART AND NATURE

[3] Naess called this "ecosophy T". His ecosophy is in no small part inspired by Spinoza (Naess, 1990).

How does Naess think people might learn to develop their own ecosophies? He suggests that *ecophilosophy* is appropriate to the "university milieu" (1990: 36) as it involves examination of problems common to the disciplines of ecology and philosophy. However, he also indicates that studying ecophilosophy and forming an ecosophy are not synonymous. He states that we "study ecophilosophy, but to approach practical situations involving ourselves we aim to develop our own ecosophies" (1990: 37). Naess emphasises that developing one's own ecosophy does not mean creating it from scratch by oneself. Instead "it is enough that it is a kind of total view which you feel at home with, 'where you philosophically belong'" (1990: 37). Naess's relational understanding of reality has the merit of imbuing spontaneous human emotion and subjectivity with value. Naess does not however advocate that those who are concerned about the environmental crisis blindly follow feeling. He maintains that outbreaks of feeling "do little more than express what a person likes or dislikes. Value standpoints", in contrast, "are reflections in relation to such reactions" (Naess, 1990: 64). Naess therefore argues that followers of the deep ecology movement should receive training in making their value standpoints clear so that they can meaningfully engage in dialogue with those who adhere to different value standpoints.

Naess argues that an education that supports the aims of deep ecology will "counteract the excessive valuation of things with a price tag" (1986: 21), accord deep respect for the whole biosphere and concentrate on moderating consumption and living more simply. Naess also remarks that outdoor education should discourage "conventional goal direction" (1990: 179) in nature and things like being skilful or better than others or having the fanciest equipment. Instead it should encourage children to identify widely with non-human life through rich and varied interactions in nature. Naess (1990) was thoroughly suspicious of the widespread practice of schools examining students individually too. He felt this encouraged overly competitive and egoistic values, not deep ecological ones. While Naess generally emphasised the importance of philosophy and/or religion for the formation of personal ecosophies, he also maintained that artists and writers might be the most influential participants in the deep ecology movement. He suggests that artistic and poetic expression of deep ecological values might have greater communicative potential than the insights from professional philosophy (Naess, 1986). What Naess gestures towards, Hepburn makes clear: thoughtful engagement with the arts can inspire new perceptions, thoughts, values and actions, often better than communication via propositions in written or spoken language alone. He remarks that "new insight, new truth-discovery, in art come as a *collusion* between artist and spectator" (Hepburn, 1990: 186–187). Significantly, "the indirectness of communication is … the most powerful means of not simply communicating propositional content but of achieving a concomitant, perhaps abrupt, re-orientation of perception and thought" (1990: 186–187).

According to Hepburn (2001), aesthetic appreciation of art and nature can be trivial or serious. One trivial approach to aesthetic appreciation involves distorting the art or nature in question and falsely representing how it really is. Another trivial approach is simply being unreflective and uncritical about the sensory information that comes from the aesthetic entanglement. What matters in any serious aesthetic appreciation is the level of thoughtful engagement and spectator *collusion* with the artwork or natural environment. Hepburn explains that art and nature can be unthinkingly and trivially perceived or attended to with seriousness, "with full and thoughtful attention" (2001: 1). To exemplify the difference between trivial and serious appreciation of nature he considers two different experiences of the fall of a leaf in autumn. If the spectator observes the leaf fall without thought the full significance of the moment is lost; it "must be robbed of its poignancy, it's mute message of summer gone" (2001: 3). However, leaf veins can also be suggestive of blood veins in other species, "symbolising continuity in the forms of life ... this autumn is linked to innumerable other autumns" (2001:

3).[4] The arts can educate moral sensibilities too, perhaps especially film. Sinnerbrink argues that cinema can "elicit ethical experience by aesthetic means" (2016: 20). He claims that films do not generally invoke ethical experiences solely via abstract thought about a moral problem or dilemma. Instead cinema can enable experientially thick explorations of subjectivity, as film images and narratives engage spectators in multiple ways including their senses, emotions, imagination as well as powers of reason. He rightly points out that, though films can be ideological and manipulative, they also have the aesthetic capacity to be ethically transformative when they broaden the ethical horizons of spectators and challenge any ideological prejudices they may have via images, sounds and narratives on screen. Hepburn similarly believed that, while there is no necessary connection between art and ethics, great artworks can be appreciated seriously when they enable a rapprochement between the moral and aesthetic spheres. When this happens "some momentous moral vision is brought alive through the agency of great art" (2001: 59). Serious appreciation of art or nature and "aesthetic education" seem to be synonymous for Hepburn.

Hepburn says that "an aesthetic education is an introduction to countless alternative possibilities for feeling" (1972: 488) where the new possibilities of feeling transcend the shallow clichés of ordinary life and instead ring deep and true. Likewise, art and nature are appreciated seriously when they lead those who engage with them to think and feel in previously unimagined ways. Serious aesthetic appreciation can elicit new reactions, but also new action and the formation of new values (Hepburn, 1990). Art can be most rewarding and educational, Hepburn says, when it presents highly concrete images that prompt spectators to see otherwise elusive truths about the world, truths that spectators of art can make their own. Hepburn comments that, though "we may often be content to experience in art a succession of alternative ways of seeing the world … there is no doubt that we also particularly cherish the presentation of a perspective that we can make our own" (1990: 187). Furthermore, new views on the world are "especially prized if the perspective – a highly particularised complex, let us say, of fact, value, emotion, attitude – is normally elusive, barely accessible to us, and the work of art greatly increases its accessibility" (1990: 187). What we can learn from Naess and Hepburn then is that a balanced education is not confined to inculcating scientific knowledge or climate-fixing skills. Instead, it involves exploration of ecological values as well as serious aesthetic appreciation of the arts and nature. In what remains of this chapter I argue that *Embrace of the serpent* presents an "elusive, barely accessible" world to viewers of the film. It is a world of moral and aesthetic vision rich with educational possibilities.

EMBRACING THE SERPENT

Set in the Colombian Amazon, *Embrace of the serpent* is a quietly magical and mysterious film. It is loosely based on the travel diaries of the German ethnologist Theodor Von Martius and the American botanist Richard Evan Schultes.[5] Von Martius and Schultes made separate journeys down the Amazon in search of the yakruna plant – Von Martius at the turn of the twentieth century and Schultes some thirty years later. The former was searching for the plant to cure his unnamed illness of the body. The latter travelled because he had an illness of the soul – he had forgotten how to dream and hoped the plant would help him remember. The two journeys in the film are connected together by Karamakate, one of the last members of the Cohiuano people. Karamakate accompanies both explorers on their quests for the yakruna. As

[4] Spinoza's idea that god is nature, and that nature is a whole, informs both Naess's (1990) and Hepburn's views on the connectedness of all of nature. Hepburn says that "a serious aesthetic approach to nature is close to a Spinozistic intellectual love of God-or-Nature in its totality" (Hepburn, 2001: 6).

[5] In real life Theodor's surname was Koch-Grünberg.

a young man Karamakate agrees to travel with Von Martius, hoping he will help him find the other last members of the Cohiuano. Before agreeing to travel with him he insists that Von Martius "respect" the jungle and not cut any roots or eat any meat or fish until the rains come. Von Martius consents to these rules. However, in a starving, delirious and tragicomical state Von Martius later spears a fish on an arrow and bites into it raw. As he is doing this he screams to Karamakate that the river is full of fish and that he cannot end them. After Von Martius collapses, Karamakate comments, "You have no discipline. You will devour everything." When they eventually find the other Cohiuano, Karamakate is appalled to see they are ignoring their traditions and cultivating the yakruna. Enraged, Karamakate burns all the yakruna.

It is initially less clear why Karamakate decides to travel with Schultes. However, over the course of their journey together it becomes evident that Karamakate intends to teach him how to understand the Cohiuano way of life, a way of life that respects the forest and the river and the living things in them. When Schultes remarks that "I devote my life to plants" Karamakate replies: "That's the most reasonable thing I have heard a white man say." In a pivotal scene Karamakate asks Schultes how many edges the river has. Schultes answers that it has two. Karamakate asks how he knows this and Schultes says:

> "It's easy. One plus one equals two." Karamakate resists: "You are wrong – the river has three, five, one thousand edges – a child can easily understand that but not you. The river is the anaconda's son. We learn it in our dreams but it's the real truth. More real than what you call reality."

Karamakate explains that, for the Cohiuano, knowledge is generated from dreams induced by the yakruna. When taken to the last yakruna plant Schultes confesses he intends to cultivate its potential for high quality rubber to help with the American war effort. Karamakate insists that Schultes cannot use it for weapons and killing. Instead Schultes needs to ingest the yakruna and become one with it. Karamakate imploringly says, "I wasn't meant to teach my people; I was meant to teach you." Karamakate prepares the last yakruna for Schultes to imbibe. After taking the yakruna Schultes dreams.[6] Most of the film is shot in black and white. However, in the climactic dream sequence it explodes into colour. In his dream Schultes sees Karamakate, who has a glowing mouth and massive, iridescent eyes. Has he dreamed a different way of being? Has he seen the world through Karamakate's eyes?[7] At the close of the film he wakes and looks on in wonder as butterflies dance around him – much like Karamakate was doing when Schultes first met him.

What might we learn from this haunting film? While it eschews linear interpretation, according to the director Ciro Guerra, in Amazonian mythology a giant anaconda carried alien beings to Earth. These beings stopped in the Amazon and showed people how to live – how to fish and hunt. When the beings departed, the anaconda became the Amazon river. The beings left behind them sacred plants including the yakruna. Guerra explains that when you use yakruna

> the serpent descends again from the Milky Way and embraces you. That embrace takes you to faraway places; to the beginning where life doesn't even exist; to a place where you can see the world in a different way. I hope that's what the film means to the audience. (Guillén, 2016)

[6] The yakruna plant is a fictional creation. However, indigenous people in the Amazon basin do drink an ayahuasca brew made from the caapi vine to help them dream.

[7] Mark Kermode (2016) suggests the film inverts the dark representation of the Amazon in *Fitzcarraldo* and *Apocalypse Now* and instead turns it into "a crucible of light, as seen from the perspective of the indigenous Amazonian tribespeople".

I think the film does ask spectators to see the world with different eyes. It invokes evaluation and reflection in ways that resonate deeply with the work of both Naess and Hepburn. The film questions assumptions about objective and scientific knowledge being the only path to a true grasp of reality. As we have seen, Naess and Hepburn also open up similar questions in their work. Importantly, *Embrace of the serpent* illustrates really well how and why arts and especially film-based interventions can come to matter in education generally and STEAM programs specifically. As Sinnerbrink puts it, "cinema is where cultures across the globe can find imaginative ways to address, reflect upon, question, and explore some of the most important moral-ethical and cultural-political issues of our times" (2016: 16). More than anything *Embrace of the serpent* exemplifies that film has the aesthetic potential to generate ethically transformative educational experiences. The film invites spectators to broaden their ethical horizons and learn from Karamakate. It invites them to reflect upon their relationship with and attitude towards the non-human world. Viewers of the film may also experience a sharp deep ecological challenge to human-in-environment ideology. Given the extent of the environmental crisis such experiences and challenges are arguably needed now more than ever.

The film is dedicated to the lost peoples of the Amazon. It unsparingly sheds light on the devastation wrought by rubber barons on indigenous people as well as the Amazonian ecosystem. Naess's principles of bio-spherical egalitarianism, diversity and symbiosis, and anti-class posture are clearly opposed to such colonial and ecologically shallow practices. The film takes viewers on a journey into nature and Hepburn suggests that journeys in art and nature may be especially educative of human subjectivity (Hepburn, 1990; MacAllister, 2018). He also holds that great art encourages alternative ways of seeing the world that were not previously accessible to the spectators of that art (Hepburn, 2001). *Embrace of the serpent* brilliantly brings to life parts of the Amazon and ways of living with nature that are very remote from most of those who live in the West. The film offers viewers an opportunity to think about human–environment relations in alternative and more ecophilosophically fruitful and aesthetically serious ways. Notably, *Embrace of the serpent* has the possible pedagogical advantage of opening up these issues for reflection via the relatively accessible medium of film and not the more abstract language of philosophy.[8] For all these reasons I think *Embrace of the serpent* would be an ideal film for students in STEAM programs to watch, discuss and think deeply about. While I would recommend it as a resource for prompting reflection on the environment and sustainability in schools, the film has wide educational potential. They may not take up the invitation but all who watch it are asked to reflect on their value priorities. The film may even confront some educators and education policy makers with a deep ecological question: Do they want to help the next generation merely fix climate change and then carry on, business as usual, or do they want the next generation to embrace the serpent?

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[8] This chimes with Naess (1986), who thought that artists may be the most powerful advocates for deep ecology. However, STEAM educators thinking about using this film may also want to think about using some of Hepburn's and Naess's ideas to stimulate deeper discussion about the film. I think they would help here.

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